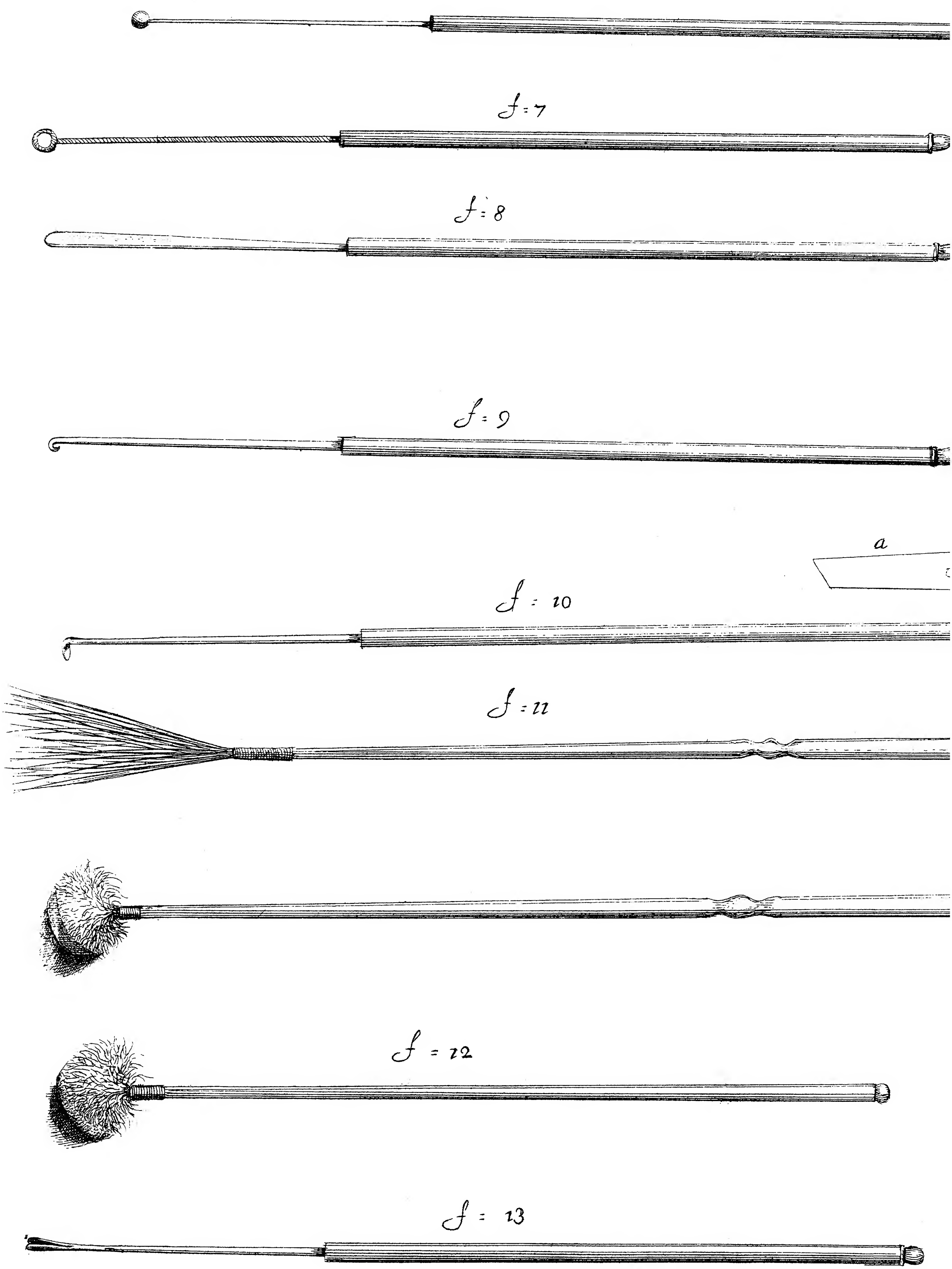

f: 6
f: 7
f: 8
f: 9
a
f: 10
f: 11
f: 12
f: 13

N°: 246

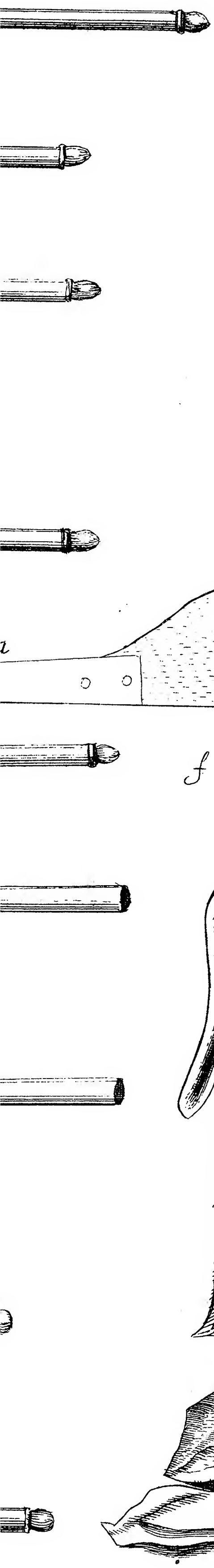
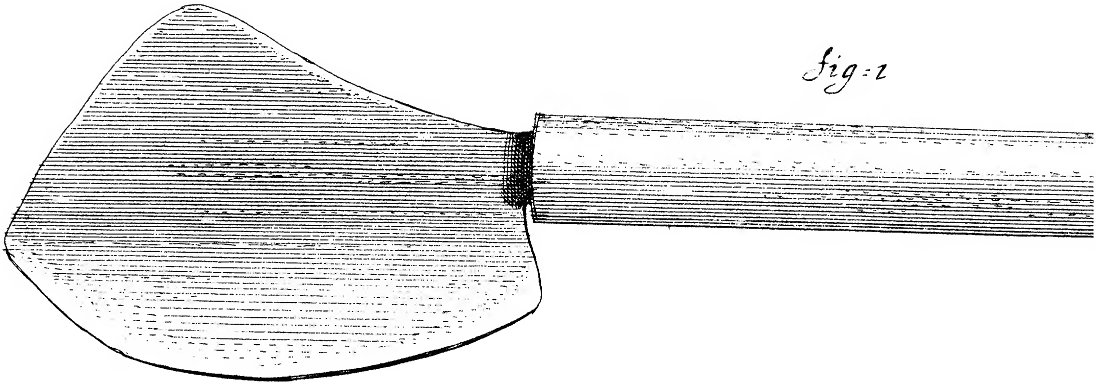
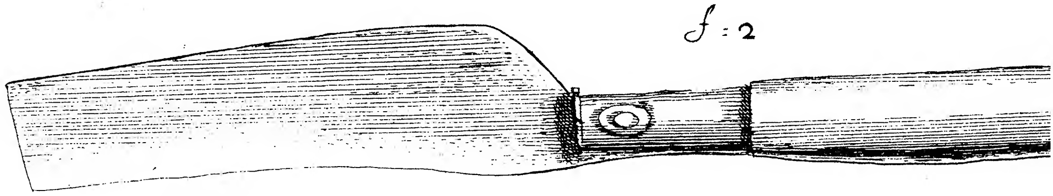


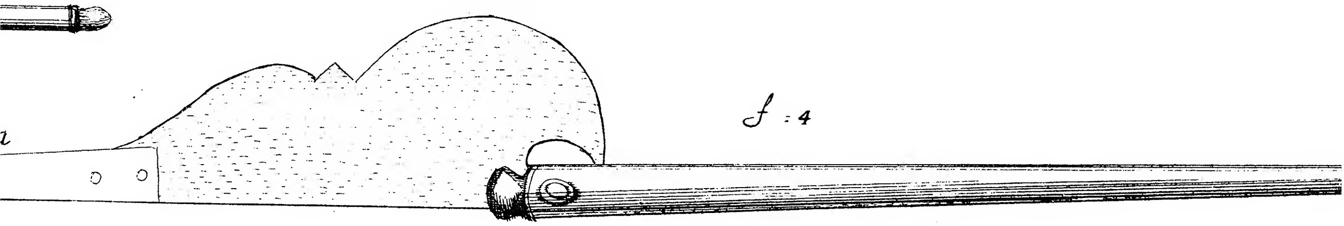
fig: 1



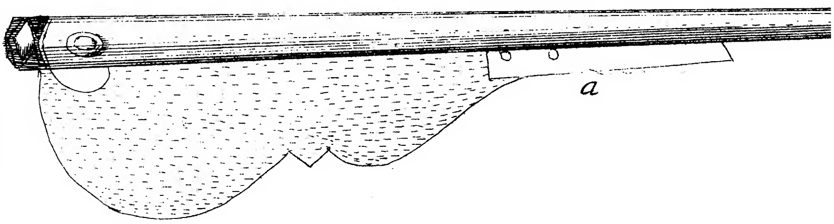
f: 2



f: 4

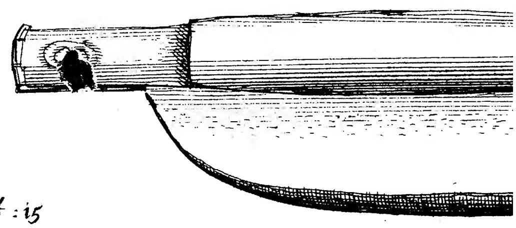


f: 5

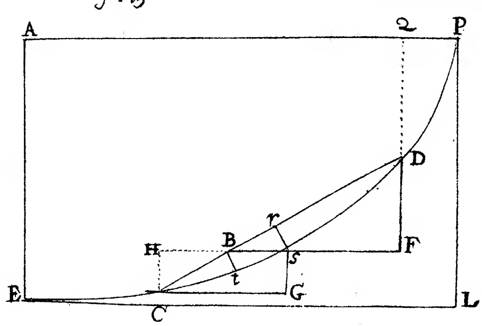


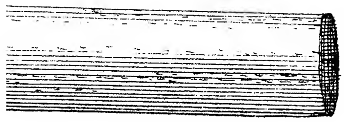
f: 14

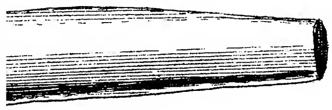
f: 3

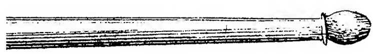


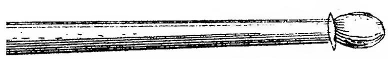
f: 15

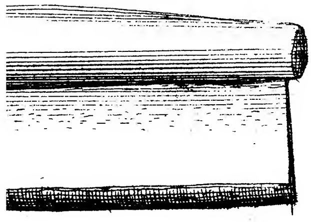












VII. Curvæ Celerrimi Deſcenſus *inveſtigatio analytica excerpta ex literis R. Sault, Math. D°.--------*

CUM me noviſſimé Societate tua dignatus es, collocuti ſumus de *Curva Celerrimi Deſcenſus*, Mundo Mathematicò, Domino Bernoulliano, propoſita. Interq; cætera mentionem feciſti de demonſtrationis meæ publicatione quam e pluribus retro menſibus inveni: quamvis autem problema illud nunc obſoletum videatur, libentius tamen publici juris faciam, quia celeberrimus Leibnitius omnes Mathematicos, hujus problematis ſolutionis compotes, enumerare ſuſcepit, necnon ne teſſeram obſervantiæ meæ tibi ipſi debitam, omittam.

Sit *AP* (Fig. 15.) linea Horizontalis; *P*, punctum a quo corpus grave deſcendit, per Curvam lineam quæſitam *ADE*, *C* & *D* puncta duo infinité propinqua, per quæ corpus deciſurum ſit, *CD* recta duo puncta connectens, *DC* & *sC*, *DF* & *SG*, *FS* & *GC* vel *sH*, momenta curvæ, abſciſſæ, & ordinatim applicatæ reſpective. Capiatur $Dr = Ds$ & $tC = BC$.

Quoniam in lineolis naſcentibus, tempus eſt ut via percurſa directé & velocitas (i. e. in hoc caſu, ut radix quadrata altitudinis corporis deſcenſi) inverſé, per Hypoth. $\frac{Ds}{\sqrt{QD}} + \frac{sC}{\sqrt{QF}} =$ Tempori *Minimo*. Et quia velocitas in punctis æquialtis *S* & *B* per curvam *DsC* & rectam *DBC* eadem eſt, tempus per *DC*, quod evidenter *minimum* eſt, erit ut $\frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$; æquentur ergo hæc tempora, & $\frac{Ds}{\sqrt{QD}} + \frac{sC}{\sqrt{QF}} = \frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$. hoc eſt $\frac{DB-Ds}{\sqrt{QD}} = \frac{sC-BC}{\sqrt{QF}}$ vel $\frac{Br}{\sqrt{QD}} = \frac{ts}{\sqrt{QF}}$.

Sed triangula Evaneſcentia *Brs*, *Bts* æquiangula ſunt triangulis *DsF*, *HsC*; Erg. $\frac{Bs}{Ds} = \frac{Br}{sF}$ & $\frac{ts}{Hs} = \frac{Bs}{st}$ componan-

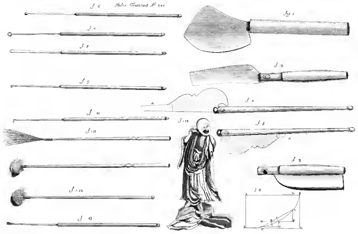
tur hæ duæ rationes æqualitatis & $\frac{Br}{Ds \times Hs} = \frac{ts}{sF \times st}$. Ex æquo $\frac{VQD}{sF \times st} = \frac{VQF}{Ds \times Hs}$. Quandoquidem autem quidvis ex Elementis æquabiliter fluere ſupponatur, ponamus $DS = SC$ & evadet ſimpliciſſima Curvæ expreſſio $\frac{VQD}{sF} = \frac{VQF}{Ds}$. ubiq; i. e. in puncto flexuræ Curva ſemper erit in ratione compoſita velocitatis directé & momenti applicatim ordinatæ, inverſe. Sit $\dot{x}$, $\dot{y}$ & $\dot{z}$ fluxſiones abſciſſæ, ordinatim applicatæ, & curvæ reſpective, $\frac{x^{\frac{1}{2}}}{\dot{y}}$ conſtans eſt, ut ſupra. Erg. $\frac{x^{\frac{1}{2}}}{\dot{y}} = 1$ ſed poſſuimus $\dot{z}$ $(= \sqrt{\dot{x}\dot{x}+\dot{y}\dot{y}})$ conſtans. Ergo ut hæc unitas conſtans ſit & dimenſiones debitas retineat $\frac{x^{\frac{1}{2}}}{\dot{y}} = \frac{a^{\frac{1}{2}}}{\sqrt{\dot{x}\dot{x}+\dot{y}\dot{y}}}$, & poſt reductionem, $\dot{y} = \frac{x^{\frac{1}{2}}\dot{x}}{\sqrt{a-x}}$ Expreſſio notiſſima Cycloidis *PEL. Q. E. J.*

VIII. *A Catalogue of Books lately printed in Italy.*

COllectanea Monumentorum veterum Eccleſiæ Græcæ ac Latinæ quæ hactenus in Vaticana Bibliotheca delituerunt. Laurentius Alexander Zacagnius Rom. Vaticanæ Bibliothecæ Præfectus, e ſcriptis codicibus nunc Sig. primum edidit, Græca Latina fecit notis illuſtravit 4to. Romæ 1698.

Oſſervationi Hiſtoriche ſopra alcuni Medaglioni del Sig. Cardinale Carpegna dell' Abbate Filippo Buonarotti. 4to. Roma 1698.

Ema-


Philos Transact N° 246
fig 1
f 2
f 3
f 4
f 5
f 6
f 7
f 8
f 9
f 10
f 13
f 14
f 16